ENVIRONMENTAL PRODUCT DECLARATION

ZEUS

ARTIGO: RUBBER FLOORING TECHNOLOGY
RESILIENT FLOOR COVERING

Zeus – Multicolored tiles with a hammered surface

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Rubber is a raw material that has unique stress-resistance and elasticity characteristics, suitable for producing a wide range of high-performance flooring. Innovative products that stem from the partnership of Artigo, with its research work that began within the Pirelli Group in the 1920's, and Mondo, established in 1948 and world leader in rubber applications for business and the sports industry. The coming together of two industrial cultures has produced a vast and diverse collection, with an exceptional number of different applications.

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According to ISO 14025

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.

PROGRAM OPERATOR	UL Environment
DECLARATION HOLDER	Artigo
DECLARATION NUMBER	478673951.103.1
DECLARED PRODUCT	ZEUS Resilient Floor Covering
REFERENCE PCR	IBU 2013, PCR Part A:PCR -Part A: Calculation rules for the Life Cycle Assessment and Requirements on the Background Report, Version 1.2, Institut Bauen und Umwelt e.V., www.bau-umwelt.com IBU 2014, PCR Part B:PCR - Part B: Requirements for the EPD of floor coverings, Version 1.6, Institut Bauen und Umwelt e.V., www.bau-umwelt.com UL Environment adapted PCR for Part A UL Environment addendum to IBU PCR Part B for floor coverings www.ul.com
DATE OF ISSUE	February 27, 2015
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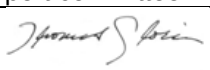
CONTENTS OF THE DECLARATION	Product definition and information about building physics Information about basic material and the material's origin Description of the product's manufacture Indication of product processing Information about the in-use conditions Life cycle assessment results Testing results and verifications

The PCR review was conducted by:	Institut Bauen und Umwelt e.V. Independent expert committee
This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories ☐ INTERNAL ☒ EXTERNAL	 Thomas Gloria, Industrial Ecology Consultants
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	 Wade Stout, UL Environment

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Product Definition

Product classification and description

Product Designation: “Zeus”

This environmental product declaration covers the “Zeus” collection of resilient flooring produced by Artigo. The product is comprised of multi-colored tiles with a hammered finish.

Range of application

Zeus resilient flooring is classified in accordance with ISO 10874 (previously EN 685) and in reference to the FCSS (Floor Covering Standard Symbols) to be installed in the following areas of application:

Domestic	
Commercial	
Industrial	

Table 1: Area of application

Product standard

The product has technical specifications compliant with the standard EN 12199 – Resilient Floor Coverings: Specification for homogenous and heterogenous relief rubber floor coverings.
The product also posseses the following characteristics:

- ASTM E 648 Critical radiant flux ≥0.45
- ASTM E 662 Smoke Density <450
- EN 13501-1 Fire Behavior B_{fl} – sl
- EN 13893 Slip Resistance DS: ≥ 0.30

Accreditation

- Greenguard Gold: UL 2818 -2013
- U Mark (DIBt): DIN EN 14041
- Blue Angel Environmental Certification: RAL UZ 120

Delivery status

Characteristics	Nominal Value	Unit	Standard
Product Thickness	3.50	mm	-
Product Weight	5.60	kg/m²	-
Abrasion Resistance	140	mm^3	ISO 4649 (Met. A-5N)
Tile Size	1.00 x 1.00	m	-
Type of Manufacture	Vulcanization	-	-
Density	1733	kg/m^3	

Table 2: Product Characteristics

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Material Content

Product composition

Component	Material	Mass %	Availability	Origin of raw materials
Binder	Styrene-Butadiene Copolymer	30.7	Non-Renewable -- Limited	Europe
Filler	Calcium Carbonate	10.9	Abundant Mineral	Europe
Reinforcement	Kaolin Silica	37.3 4.2	Abundant Mineral Abundant Mineral	Europe
Additives	Various	7.5		Europe
Pigments	Titanium Dioxide Rubber Chips Other Pigments	3.7 4.8 0.9	Non-Renewable – Limited Non-Renewable -- Limited Non-Renewable	Europe

Table 3: Product Composition

Production of primary materials

Styrene Butadiene Copolymer – an industrial polymerisation process of the monomers styrene and butadiene.

Calcium Carbonate – obtained by quarrying abundant minerals such as limestone or chalk.

Kaolin – obtained by quarrying the abundant mineral kaolinite.

Silica – an abundant mineral obtained by quarrying.

Titanium Dioxide – a white pigment produced by an industrial chemical processing of rutile, a naturally occuring ore.

Rubber Chips – a synthetic product made from the polymerisation of petroleum-based monomers.

Product Manufacturing

Production process

The production of the resilient flooring is divided into the following stages

- Vulcanization: the raw materials are blended to achieve the desired formulation. This mixture is then pressed and rolled to the required thickness, vulcanized before finally being cured to form a tough, durable product.
- Printing: the final pattern is printed onto the surface of the rubber.
- Trimming: Once finished, the product is inspected and then cut to the desired dimensions.
- Packaging: The final product is packed into cardboard boxes and stacked onto pallets ready for shipping.

Production waste

At present it is not possible to reuse waste materials and offcuts internally, so these are collected and recycled externally. Packaging materials are likewise collected and recycled externally.

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Health, safety and environmental aspects during production

- ISO 14001 Environmental Management System

Delivery and Installation

Delivery

The majority of sales are within Europe, with the primary markets being Italy, Germany and France. For European sales the product is delivered by truck, with overseas sales being shipped by transoceanic freight from the port of Savona, 30 km from the factory.

- Transport Distance 16-32T Truck (factory to distributor): 1008 km
- Transport Distance 16-32T Truck (distributor to client): 50 km
- Utilization Capacity (including empty runs): 63%
- Transport Distance Transoceanic Freight: 3320 km

Installation

The product is installed by hand using steel or carbide trowels. Approximately 300g/m² of a water-based low emission adhesive is used to fix the flooring in place. Following installation a “first clean” is performed with a neutral detergent diluted in water, either by mop or combined machine. For this LCA the machine scenario has been used.

Waste

During the installation approximately 5% of the material is lost as off-cuts – this waste is generally sent to landfill unless other site-specific valorization schemes are in place.

Packaging

All packaging materials are recyclable, however due to the variability of waste treatment on construction sites the hypothesis of 100% packaging material to landfill has been retained for this EPD.

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Use Stage

Reference Service Life (RSL)

For this product, the stated RSL is 40 years. It should be noted, however, that the service life of a resilient floor covering may vary depending on the amount and nature of floor traffic and the type and frequency of maintenance. The manufacturer has provided this service life on the basis of over 80 years experience of flooring manufacture and supply. This RSL is applicable as long as the product use complies with that defined by EN 685 and EN 1817 in accordance with the product's classification.

Extraordinary Effects

Water - The product is impermeable to water.

Mechanical damage - Mechanical damage does not chemically alter the product.

Cleaning and maintenance

Daily cleaning of the installed floor involves a soft brush and has not been included in this study. The manufacturer advises routine cleaning once per month with a neutral detergent diluted in water. An extraordinary clean may be performed every six months with a mild alkaline detergent diluted in water. Cleaning may be performed by mop or machine, however only the machine has been taken into account for this study.

Prevention of structural damage

To avoid excessive wear, usage should be restricted to the stated areas of application as outlined by the norm EN 685.

Health aspects during usage

Zeus is compliant with BlueAngel and GreenGuard Gold specifications.

End of Life

Although it is technically possible to recycle rubber floorings to create other products, there is not a large infrastructure in place to deal with this waste stream, and as such the majority is sent to landfill.

Scenarios

For the purpose of this LCA, it has been assumed that 100% of the product is sent to landfill at the end of its useful life. The transport between construction site and landfill facility is by truck, with an estimated distance of 30 km.

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Life Cycle Assessment (LCA)

A full Life Cycle Assessment has been performed according to ISO 14040, ISO 14044 and in compliance with EN15804.

This LCA comprises the following steps:

- Production Stage A1-A3 (raw materials, transport, manufacturing)
- Construction Stage A4-A5 (delivery of final product, installation in the building)
- Use Stage B1-B7 (use, maintenance, repair, replacement, refurbishment, energy, water)
- End of Life C1-C4 (deconstruction, transport, waste processing, disposal)

Functional Unit description

The functional unit is one square meter of installed product. The reference service life considered is 40 years.

	Value	Unit
Functional Unit	1	m²
Conversion factor to 1kg	0.179	-

Table 4: Functional Unit

Cut-off criteria

The cut -off criteria shall be 1% of renewable and non-renewable primary energy usage and 1% of the total mass of that unit process. The total neglected input flows per module shall be a maximum of 5% of energy usage and mass.

For this study, all input and output flows have been considered at 100%, including raw materials as per the product composition provided by the manufacturer and packaging of raw materials as well as the final product. Energy and water consumptions have also been considered at 100% according to the data prodided.

LCA data

As a general rule, specific data derived from specific production processes or average data derived from specific production processes have been used as the first choice as a basis for calculating an EPD.

To model the life cycle of the product in question, the software SimaPro 8, developed by Pré, has been used in conjunction with the LCA database ecoinvent v3.0.1.

Data quality

The requirements for data quality and LCA data are in accordance with the specifications of the PCR.

Temporal Coverage – producer specific data is averaged over 1 year of production and from within the last 5 years (2013-2014). Generic data is taken from the ecoinvent 3.1 database, the entirety of which was updated in 2014 with the introduction of the Version 3. Inputs to and outputs from the system are accounted for over a period of 100 years from the year for which the data set is deemed relevant.

Technological Coverage – the technological coverage of the data reflects the physical reality of the declared product.

Geographical Coverage – whenever possible, country specific data reflecting the reality of the Artigo supply chain has been used. If country specific data is unavailable, European regional data is used in preference to global data sources.

System Boundaries

A1 – A3: includes the provision of all raw materials and their packaging, transport to the production site and energy consumption during the manufacturing of the product, as well as processing of waste generated by the factory.

A4 – A5: includes the transport from the factory to the final customer, packaging of the final product and the installation of the product, as well as all consumables and energy required and processing of waste generated during the installation.

B1 – B7: includes provision and transport of all materials, products and services related to the use phase of the product, as well as their related energy and water consumption, and the processing of any resulting waste.

C1 – C4: includes provision and transport of all materials, products and services related to the end of life phase of the product, including energy and water consumption, as well as the end of life processing of the product.

	Production Stage			Construction Process Stage		Use Stage							End-of-Life Stage				Next product System
	Raw material supply (extraction, processing, recycled material)	Transport to manufacturer	Manufacturing	Transport to building site	Installation into building	Use / application	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction / demolition	Transport to EoL	Waste processing for reuse, recovery or recycling	Disposal	Reuse, recovery or recycling potential
Modules	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C4	C4	D
Accounted for:	X	X	X	X	X	X	X	MND	MND	MND	X*	X*	X*	X	MND	X	MND

Table 5: Scope of the study

*module has been considered but has no associated inputs/outputs, therefore does not appear in the results.

Allocation

The overall values for the factory's material and energy consumptions during a period of one year have been divided by the annual production of each product to supply a value per square meter of flooring produced. All factory data is measured in square meters, and it is assumed that the process consumptions are governed by area of flooring processed rather than mass.

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Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to /EN 15804/ and the building context, respectively the product-specific characteristics of performance, are taken into account.

LCA: Scenarios and additional technical information

Transport to the construction site (A4)

Name	Value	Unit
Liters of fuel (truck)	0.0045	l/100km
Transport distance	1058	km
Capacity utilization (including empty runs)	63	%
Liters of fuel (boat)	0.000265	l/100km
Transport distance	3320	km
Capacity utilization	48	%
Gross density of products transported	1550	kg/m^3

Installation in the building (A5)

Name	Value	Unit
Adhesive	0.3	kg
Water consumption	0	m3
Electricity consumption	0	kWh
Other energy carriers	0	MJ
Material Loss	5	%
Output substances following waste treatment on site	0	kg
Dust in the air	0	kg

Use (B1)

Name	Value	Unit
VOC emissions	0.1	g/m²

Maintenance (B2)

Name	Value	Unit
Maintenance cycle	12	Number/year
Water consumption	3.00E-05	m^3
Detergent	9.00E-07	m^3
Electricity consumption	4.10E-4	kWh

Reference Service Life

Name	Value	Unit
Reference Service Life	40	years

End of Life (C1-4)

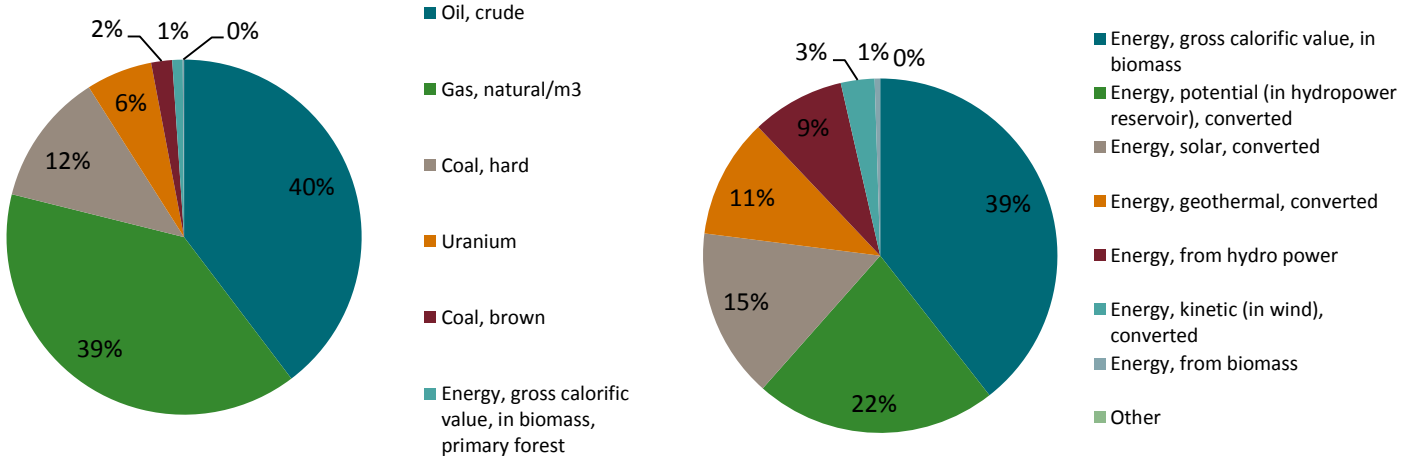
Name	Value	Unit
Collected separately	0	kg
Collected as mixed construction waste	0	kg
Reuse	0	kg
Recycling	0	kg
Energy recovery	0	kg
Landfill	5.6	kg

Results

Life Cycle Inventory (LCI) analysis

Indicator	Units	A1	A2	A3	A4	A5	B1	B2	C2	C4
Non renewable primary energy by resource										
Total of all compartments	MJ, net CV	2,62E+02	1,07E+01	4,17E+01	1,86E+01	2,47E+01	-	1,40E+01	-	-
Oil, crude	MJ, net CV	1,08E+02	8,97E+00	4,14E+00	1,51E+01	8,27E+00	-	2,45E+00	-	-
Gas, natural/m3	MJ, net CV	1,04E+02	7,21E-01	2,51E+01	1,31E+00	1,02E+01	-	4,42E+00	-	-
Coal, hard	MJ, net CV	2,83E+01	7,92E-01	7,73E+00	1,55E+00	3,60E+00	-	3,01E+00	-	-
Uranium	MJ, net CV	1,51E+01	1,87E-01	3,96E+00	4,09E-01	1,84E+00	-	9,28E-01	-	-
Coal, brown	MJ, net CV	5,30E+00	6,83E-02	6,40E-01	1,53E-01	6,29E-01	-	3,03E-01	-	-
Energy, gross calorific value, in biomass, primary forest	MJ, net CV	6,48E-01	2,98E-04	3,46E-03	5,14E-04	7,48E-02	-	2,81E+00	-	-
Gas, mine, off-gas, process, coal mining/m3	MJ, net CV	2,42E-01	1,01E-02	1,06E-01	1,98E-02	3,96E-02	-	3,89E-02	-	-
Renewable primary energy by resource										
Total of all compartments	MJ, net CV	7,09E+00	1,35E-01	1,09E+01	2,61E-01	1,60E+00	-	3,87E+00	-	-
Energy, gross calorific value, in biomass	MJ, net CV	4,68E+00	6,47E-02	7,05E-01	1,10E-01	6,41E-01	-	3,21E+00	-	-
Energy, potential (in hydropower reservoir), converted	MJ, net CV	2,05E+00	5,93E-02	2,20E+00	1,26E-01	4,96E-01	-	3,46E-01	-	-
Energy, solar, converted	MJ, net CV	5,26E-04	7,36E-05	3,52E+00	1,12E-04	1,76E-01	-	6,71E-04	-	-
Energy, geothermal, converted	MJ, net CV	1,51E-01	6,13E-03	2,15E+00	1,38E-02	1,33E-01	-	1,54E-01	-	-
Energy, from hydro power	MJ, net CV	2,08E-04	-	1,83E+00	-	9,16E-02	-	1,13E-01	-	-
Energy, kinetic (in wind), converted	MJ, net CV	2,17E-01	4,86E-03	4,05E-01	1,10E-02	5,50E-02	-	4,24E-02	-	-
Energy, from biomass		2,16E-04	-	1,08E-01	-	5,43E-03	-	6,66E-03	-	-
Other		3,43E-07	2,78E-17	-	-	1,64E-08	-	4,44E-16	-	-

Table 6: Energy usage by source



Figures 1 & 2: Graphs showing the sources of non-renewable (Left) and renewable (Right) energy

Indicator	Units	A1	A2	A3	A4	A5	B1	B2	C2	C4
Input flow indicators										
Use of renewable primary energy excluding the renewable primary energy resources used as raw materials	MJ, calorific value ([Hi] lower calorific value)	4,63E+00	1,35E-01	1,07E+01	2,61E-01	1,47E+00	-	3,87E+00	5,48E-03	2,72E-02
Use of renewable primary energy resources used as raw materials	MJ, calorific value ([Hi] lower calorific value)	2,46E+00	-	1,90E-01	-	1,27E-01	-	-	-	-
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ, calorific value ([Hi] lower calorific value)	7,09E+00	1,35E-01	1,09E+01	2,61E-01	1,60E+00	-	3,87E+00	5,48E-03	2,72E-02
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ, calorific value ([Hi] lower calorific value)	1,83E+02	1,07E+01	4,16E+01	1,86E+01	1,85E+01	-	1,40E+01	4,36E-01	8,53E-01
Use of non renewable primary energy resources used as raw materials	MJ, calorific value ([Hi] lower calorific value)	7,91E+01	-	8,00E-02	-	6,21E+00	-	-	-	-
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ, calorific value ([Hi] lower calorific value)	2,62E+02	1,07E+01	4,17E+01	1,86E+01	2,47E+01	-	1,40E+01	4,36E-01	8,53E-01
Use of secondary materials	kg	-	-	-	-	-	-	-	-	-
Use of renewable secondary fuels	MJ, calorific value ([Hi] lower calorific value)	-	-	-	-	-	-	-	-	-
Use of non-renewable secondary fuels	MJ, calorific value ([Hi]	-	-	-	-	-	-	-	-	-
Net use of fresh water resources	m^3	1,36E-01	1,88E-03	9,39E-03	3,07E-03	1,66E-02	-	2,09E-01	7,62E-05	8,67E-04
Output flow indicators										
Water Pollution	m^3	1,03E+01	6,22E+00	2,45E-01	5,48E-01	4,14E-01	5,45E-01	-	2,31E+00	9,92E-03
Air Pollution	m^3	1,70E+03	1,08E+03	8,84E+01	1,32E+02	1,58E+02	1,17E+02	9,09E-04	1,16E+02	3,58E+00
Hazardous waste disposed	kg	8,50E-01	6,97E-01	6,77E-03	2,45E-02	1,18E-02	5,29E-02	-	5,56E-02	2,74E-04
Non-hazardous waste disposed	kg	8,77E+00	1,98E+00	5,50E-01	9,73E-01	8,19E-01	1,05E+00	-	2,59E-01	2,23E-02
Radioactive waste disposed	kg	6,52E-04	2,81E-04	7,26E-05	9,40E-05	1,24E-04	4,57E-05	-	2,67E-05	2,94E-06
Components for re-use	kg	-	-	-	-	-	-	-	-	-
Materials for recycling	kg	-	-	-	-	-	-	-	-	-
Materials for energy recovery	kg	-	-	-	-	-	-	-	-	-
Exported energy	MJ, heating value ([Hi] lower heating value) per energy carrier	-	-	-	-	-	-	-	-	-

Table 7: Input / Output Flow Indicators

Life Cycle Impact Assessment (LCIA)

LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks. Module B2 – Maintenance has been evaluated for the entire life cycle of the product. The following table shows the impact assessment results for the product:

Indicator	Units	A1	A2	A3	A4	A5	B1	B2	C2	C4
TRACI Indicators										
Global Warming Air	kg CO2 equiv.	1,20E+01	6,98E-01	2,11E+00	1,21E+00	1,57E+00	-	1,42E+00	2,83E-02	2,74E-01
Ozone Depletion Air	kg CFC 11 equiv.	2,07E-06	1,71E-07	4,22E-07	2,90E-07	4,04E-07	-	1,07E-07	6,92E-09	1,16E-08
Acidification Air	kg SO2 equiv.	5,19E-02	3,23E-03	9,12E-03	9,16E-03	5,71E-03	-	4,45E-03	1,31E-04	2,99E-04
Eutrophication	kg N equiv.	6,64E-03	4,11E-04	7,34E-04	7,88E-04	1,70E-03	-	3,33E-03	1,67E-05	4,36E-04
Smog Air	kg O3 equiv.	5,06E-01	7,56E-02	9,03E-02	1,75E-01	6,49E-02	3,60E-07	4,87E-02	3,07E-03	6,23E-03
EN 15804 Indicators										
Global Warming Potential (GWP)	kg CO2 equiv.	1,20E+01	6,98E-01	2,11E+00	1,21E+00	1,56E+00	-	1,42E+00	2,83E-02	2,74E-01
Depletion potential of the stratospheric ozone layer, (ODP)	kg CFC 11 equiv.	1,94E-06	1,29E-07	3,54E-07	2,19E-07	3,81E-07	-	9,31E-08	5,21E-09	8,81E-09
Acidification Potential of soil and water (AP)	kg SO2 equiv.	5,50E-02	2,82E-03	9,56E-03	8,53E-03	5,83E-03	-	4,37E-03	1,14E-04	2,49E-04
Eutrophication Potential (EP)	kg (PO4) equiv.	4,91E-03	4,79E-04	7,26E-04	1,07E-03	1,00E-03	-	1,80E-03	1,94E-05	2,09E-04
Formation potential of tropospheric ozone (POCP)	kg ethene equiv.	8,18E-03	3,11E-04	7,82E-04	6,65E-04	8,00E-04	3,77E-08	1,05E-03	1,26E-05	7,38E-05
Abiotic depletion potential (ADP-elements) for non fossil resources	kg Sb equiv.	1,95E-04	4,39E-06	6,46E-05	6,96E-06	1,89E-05	-	2,13E-05	1,78E-07	3,76E-07
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ, calorific value ([Hi] lower calorific value)	2,46E+02	1,06E+01	3,77E+01	1,82E+01	2,28E+01	-	1,02E+01	4,28E-01	8,07E-01

Table 8: Environmental Impact Indicators

All EN 15804 indicators have been calculated using the method CML 4.1 (October 2012). TRACI impacts have been calculated using the method TRACI 2.1 v1.01 (2013).

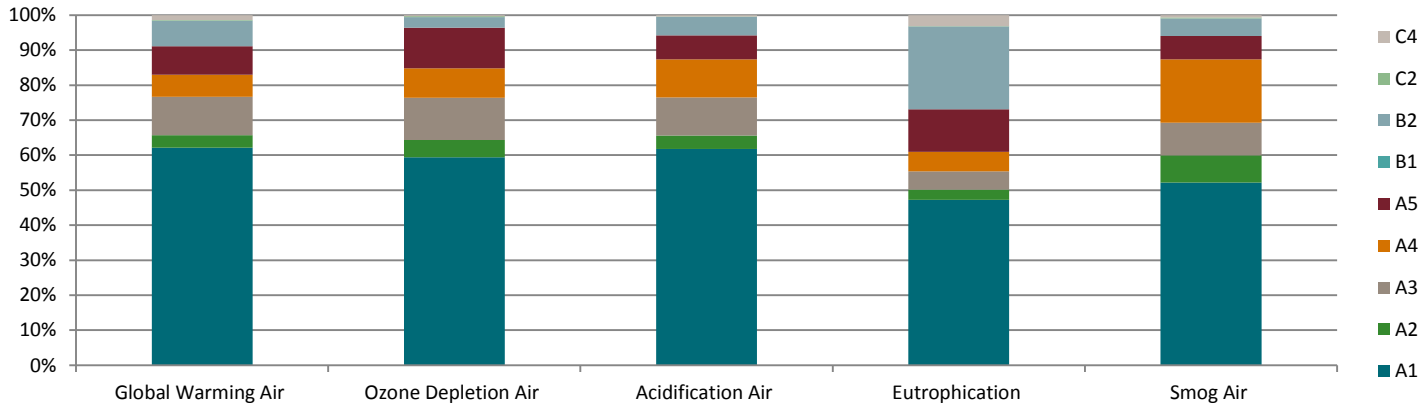


Figure 3: Graph depicting the impact indicators as calculated by the TRACI method

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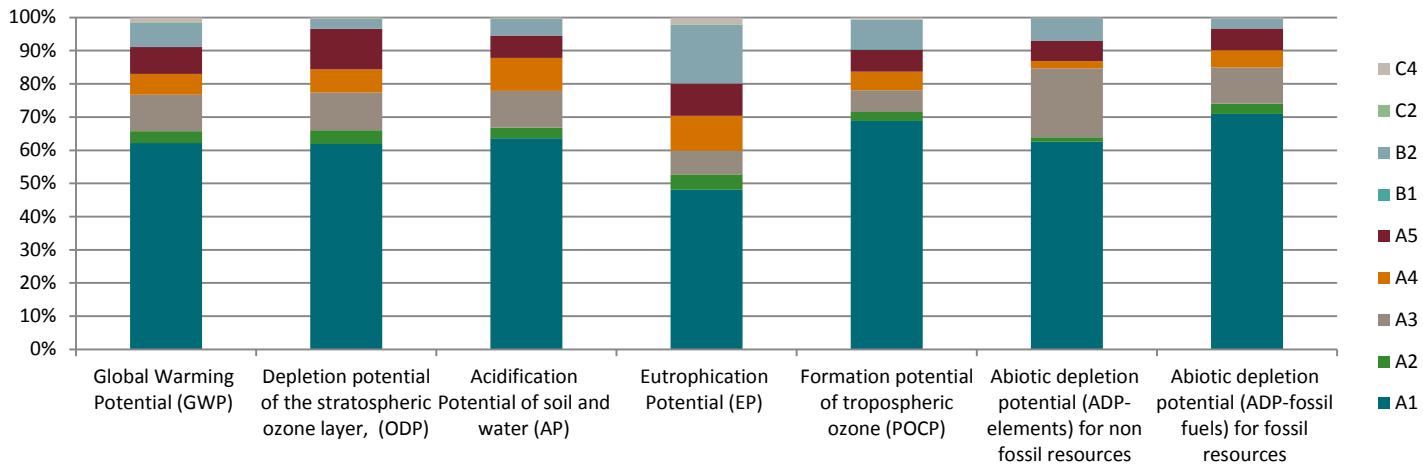

Figure 4: Graph depicting impact indicator results calculated according to EN 15804

Interpretation

The primary contributor to the environmental impacts of the product is the Stage A1 – Extraction and supply of raw materials. Stage A3 – Manufacturing has the second greatest impact on average across the indicators, primarily due to the electricity usage during the production process. The Stage A5 – Installation also has high impacts, due to the quantity of product wasted during an average installation. Stage B2 – Maintenance has high associated impacts which correspond to low-impact cleaning activities repeated monthly over the lifetime of the product, resulting in a high lifetime impact.

Requisite Evidence

GREENGUARD Certification
Standard: UL 2818 - 2013 Standard for Chemical Emissions for Building Materials, Finishes and Furnishings
Number: 62443-410
Certification Status: Certified
Certification Period(s) 10/2014 - 10/2015

GREENGUARD Gold Certification
Standard: UL 2818 -2013 Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings
Number: 62443-420
Certification Status: Certified
Certification Period(s) 10/2014 - 10/2015

Blue Angel Certification
Standard : RAL-UZ 120 Certificate for special environmental friendliness
Number: 25801
Certification period: 07/2014-12/2016

U Mark DIBt
Standard: DIN EN 14041: Resilient, textile and laminate floor coverings. Essential characteristics
Number: Z-156.602-637
Certificate Status: Certified
Certification Period(s) 11/2014 - 11/2019

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According to ISO 14025

References

Institut Bauen und Umwelt
Institut Bauen und Umwelt e.V., Berlin (pub.): Generation of Environmental Product Declarations (EPDs);

ISO 14025
DIN EN ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures

EN 15804
EN 15804:2012-04+A1 2013: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

IBU 2013, PCR Part A
PCR -Part A: Calculation rules for the Life Cycle Assessment and Requirements on the Background Report, Version 1.2, Institut Bauen und Umwelt e.V., www.bau-umwelt.com

IBU 2014, PCR Part B
PCR - Part B: Requirements for the EPD of floor coverings, Version 1.6, Institut Bauen und Umwelt e.V., www.bau-umwelt.com

UL Environment adapted PCR for Part A
www.ul.com

UL Environment addendum to IBU PCR Part B for floor coverings
www.ul.com

ecoinvent V3
ecoinvent Life Cycle Inventory database Version 3
http://www.ecoinvent.org

ENVIRONMENTAL PRODUCT DECLARATION

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According to ISO 14025

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